CLAIMS

What is claimed is:

1. A method of purifying polyether polyols of non-volatile impurities, said method comprising:

providing a crude polyether polyol having present therein at least one non-volatile impurity with a number-average molecular weight of at least 25,000 Daltons;

contacting the crude polyether polyol with an adsorbent for a time and under conditions sufficient to adsorb substantially all of the non-volatile impurities onto the adsorbent; and

separating a purified polyether polyol from the adsorbent.

2. The method as set forth in claim 1 further including the step of selecting the adsorbent from at least one of activated carbon, diatomaceous earth, charcoal, attapulgite, and clay.

3. The method as set forth in claim 1 wherein the step of separating the purified polyether polyol is further defined as providing a filter media to filter the adsorbent with the adsorbed non-volatile impurity from the purified polyether polyol.

4. The method as set forth in claim 3 further including the step of filtering the mixture of the purified polyether polyol and the adsorbent with the adsorbed non-volatile impurity through the filter media to substantially remove the adsorbent and the non-volatile impurity.

5. The method as set forth in claim 4 wherein the step of filtering the purified polyether polyol is further defined as filtering the polyether polyol through the filter media under a pressure of 10 to 50 psig.

6. The method as set forth in claim 4 wherein the step of filtering the purified polyether polyol is continued for a period of time of from 1 to 5 hours to substantially remove the adsorbent and the non-volatile impurity.

7. The method as set forth in claim 3 further including the step of pre-filtering the crude polyether polyol through the filter media prior to contacting the crude polyether polyol with the adsorbent.

8. The method as set forth in claim 7 wherein the step of pre-filtering the crude polyether polyol is carried out under a pressure of 10 to 50 psig.

9. The method as set forth in claim 7 further including the step of filtering the purified polyether polyol and the adsorbent with the adsorbed non-volatile impurity after contacting the crude polyether polyol with the adsorbent through the same filter media used to pre-filter the crude polyether polyol.

10. The method as set forth in claim 1 wherein the step of contacting the crude polyether polyol with the adsorbent is further defined as mixing the crude polyether polyol with the adsorbent.

11. The method as set forth in claim 10 wherein the step of mixing the crude polyether polyol with the adsorbent is carried out for a period of time of from 5 to 120 minutes.

12. The method as set forth in claim 1 wherein the step of providing the crude polyether polyol having the non-volatile impurity is further defined as providing the crude polyether polyol having present therein at least one of polypropylene oxide and polyethylene oxide with a number-average molecular weight of at least 45,000 Daltons.

13. A method of forming a polyurethane foam, said method comprising the steps of:

contacting a crude polyether polyol having present therein a non-volatile impurity with a number-average molecular weight of at least 25,000 Daltons with an adsorbent for a time and under conditions sufficient to absorb substantially all of remove the non-volatile impurity onto the absorbent;

separating a purified polyether polyol from the adsorbent after contacting the crude polyether polyol with the adsorbent; and

reacting the purified polyether polyol with at least one isocyanate to produce a polyurethane foam having increased stability compared to a foam prepared using the crude polyether polyol.

14. The method as set forth in claim 13 further including the step of selecting the adsorbent from at least one of activated carbon, diatomaceous earth, charcoal, attapulgite, and clay.

15. The method as set forth in claim 13 wherein the step of selecting the purified polyether polyol is further defined as providing a filter media to filter the adsorbent with adsorbed non-volatile impurity from the purified polyether polyol.

16. The method as set forth in claim 15 further including the step of filtering the purified polyether polyol and the adsorbent with adsorbed non-volatile impurity through the filter media to substantially remove the adsorbent and the non-volatile impurity.

17. The method as set forth in claim 16 wherein the step of filtering the polyether polyol is further defined as filtering the polyether polyol through the filter media under a pressure of 10 to 50 psig.

18. The method as set forth in claim 17 wherein the step of filtering the purified polyether polyol is continued for a period of time of from 1 to 5 hours to substantially remove the adsorbent and the non-volatile impurity.

19. The method as set forth in claim 15 further including the step of pre-filtering the crude polyether polyol through the filter media prior to contacting the crude polyether polyol with the adsorbent.

20. The method as set forth in claim 19 wherein the step of pre-filtering the crude polyether polyol is carried out under a pressure of 10 to 50 psig.

21. The method as set forth in claim 19 further including the step of filtering the purified polyether polyol and the adsorbent with adsorbed non-volatile impurity after contacting the crude polyether polyol with the adsorbent through the same filter media used to pre-filter the polyether polyol.

22. The method as set forth in claim 13 wherein the step of contacting the crude polyether polyol with the adsorbent is further defined as mixing the crude polyether polyol with the adsorbent.

23. The method as set forth in claim 22 wherein the step of mixing the crude polyether polyol and the adsorbent is carried out for a period of from 5 to 120 minutes.

24. The method as set forth in claim 13 wherein the step of providing the crude polyether polyol having the non-volatile impurity is further defined as providing the

crude polyether polyol having polypropylene oxide present therein with a number-average molecular weight of at least 45,000 Daltons.